Name: _____ **Student Number:** _____

University of Saskatchewan
Department of Computer Science
CMPT 111.3 Section 02 (Instructor: Guus van de Velde)
Miderm Examination   Open Book / Open Mind
March 3rd, 2003

Total Marks: 45   **Time: 50 minutes**

Answer questions 1-15 on the opt-scan sheet, all other questions in the spaces provided in this exam paper. If you don't have enough space, write on the back of the page, indicating clearly that your answer is continued there. Be sure to pace yourself according to the marks allotted to each question.

Part 1 (true/false, one mark each) put your responses on the opt-scan sheet

1 : A (true) B(false)   Java allows identifiers (i.e. names of classes, objects and methods) to have blank spaces within them.

2 : A (true) B(false)   In java, the computer monitor is represented by the object name `System.in`.

3 : A (true) B(false)   `String s = "Humpty Dumpty sat on a Wall";`
`int t = s.indexOf("um");`
 // After these statements, t has the value 2

4 : A (true) B(false)   If a program compiles it must be free of errors.

5 : A (true) B(false)   `float` is a pre-defined class offered by java.

6 : A (true) B(false)   All methods of a class can be overloaded including the constructors.

7 : A (true) B(false)   The following condition will always be true:
 `(A > B) || (B > A)`.

8 : A (true) B(false)   The following loop will be executed forever:
```
   for ( int i = 10; i > 0; i++)
 {
     System.out.print(i);
 }
```

9 : A (true) B(false)   The java statement
`System.out.println("hello " + 24 + 16);`
displays on screen: `hello 40`

10: A (true) B(false)   Every method of a class must contain a return statement.

Part 2 (Multiple choice, two marks each) put your responses on the opt-scan sheet

11: **The follwing piece of code has as a result that the String s contains the text "midterm"**

A
```
String s=new String();
s="mid";
s+="term";
```

B
```
String s=new String();
s="term";
s="mid"+s;
```

C
```
String t=new String();
t="mid";
String s=t.concat("term");
```

D   All of the above have the same result

12: **The output of the loop listed below is:**
```
for (int i=10; i>0; i--)
{
    System.out.print((i--)+"-");
}
```

A   10-9-8-7-6-5-4-3-2-1-

B   10-8-6-4-2-

C   10-9-8-7-6-5-4-3-2-1-0-

D   1-2-3-4-5-6-7-8-9-10-

13: **The correct declaration for a method that can be called by other classes, is named doSomething, returns a String and receives no parameters is:**

A   `private String doSomething(String a)`

B   `public void doSomething`

C   `public String doSomething()`

D   `public void doSomething(a)`

14: **What is displayed by the following piece of code?**
```
String s=new String();
S="Hi there, how are you doing so far?";
System.out.println("hi"+s.substring(9,21)+s.substring(28) );
```

A   `hi, how are you so far?`

B   `hi, how are yo so far?`

C   `hi how are you so far?`

D   `hi how are youso far?`

15: **Why do you need to use the** `javac FileName.java` **command before you can run the** `java FileName` **command?**

A   Because you need to tell the DOS environment that you will be running a java program.

B   Because you need to convert the java code into bytecode, which can be read by the Java Virtual machine.

C   Because you need to rename the `FileName.java` file into a classfile

D   Because the computer needs to know where it should look for java

Part 3 (Open questions) put your responses in the spaces provided on this paper

16.

a) (2 Marks) What is the return type of a constructor?

b) (3 Marks) Use an **example** to explain the difference between `print()` and `println()` methods.

c) **(3 Marks)** Given the following class `Question2c`. Complete the java code to show how to invoke each method (from inside the `main` method of `Question2c`).

```
class Question2c
{
    public void firstMeth()
    {
        System.out.println("Hi there!");
    }

    public void secondMeth()
    {
        System.out.println("Like the exam so far?");
    }

    public Question2c()
    {
    }

    public static void main(String[] arg)
    {
        Question2c q2c=
```

```
        }
    }
```

17. (5 Marks) What is displayed by the following java program fragment?

```
int a, b;
String s1, s2, s3;
s1 = new String("Winter ");
s2 = new String(" in Saskatoon");
s3 = s1.trim().toUpperCase() + s2.toLowerCase();
a = s3.length();
System.out.println(s3 +" contains "+ a + " characters");
System.out.println(s3.substring(15));
```

18. (6 Marks) What is displayed by the following java program fragment?

```
int x,y;
float z = 1f;
for (x=1; x<10; x+=3)
{
    y = y + x;
    z = z + x/2;
}
System.out.println(x + " " + y + " " + z);
```

19. (3 Marks) Suppose a main method in some class contains the statements:

```
int i;
float f;
String s;
Junk j = new Junk();
f = j.silly(s,i);
```

In the blank below, write the header line for the silly method (i.e. the first line of the method definition)

a) public_____

b) What is the name of the class containing the silly method? _____

20.

a) (3 Marks) Why does the following method generate an error at compile time:

```
public int meth1(int X)
{
  if(X > 10)
     System.out.println("Sorry, too big for me");
   else
     return (X*X);
}
```

b) (5 marks) In the following code: The goal of the program is to let the user input his/her age. Once the user enters a number as his/her response, the age is printed out on the screen. Unfortunately, there are some errors in the code. Circle exactly 5 syntax errors. Do not circle entire lines, only the error (i.e. the wrong thing, extra thing, missing thing). There is no more than one error per line of code.

```
import java.io.*;

class 5Errors
{
   public static void main(string[] arg) throws Exception
   {

      BufferedReader kb = new BufferedReader(
          new InputStreamReader(System.out))

      String s;
      int number = 0;

      System.out.println("Please input your age?);
      s = kb.readLine;
      number = Integer.parseInt(s);
      System.out.println("You are "+ number +" years old.");
   }
}
```

******** The End ********